DOCUMENT RESUME

ED 381 107 HE 028 245

AUTHOR O'Brien, Eileen M.
TITLE Master's Degree Students and Recipients: A Profile.
INSTITUTION American Council on Education, Washington, D.C. Div. of Policy Analysis and Research.
PUB DATE 92
NOTE 14p.
AVAILABLE FROM Publications, American Council on Education, One Dupont Circle, N.W., Washington, DC 20036 (single copy, $10; annual subscription, $58; 10 percent member discount).
PUB TYPE Collected Works - Serials (022) -- Statistical Data (110)
JOURNAL CIT Research Briefs; v3 n1 1992

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Economic Impact; Employment; Ethnic Groups; Full Time Students; *Graduate Students; Graduate Study; Higher Education; *Masters Degrees; Masters Programs; Part Time Students; Private Colleges; Public Colleges; *Student Characteristics; Student Financial Aid; Tables (Data); *Trend Analysis

ABSTRACT

This research brief summarizes data available on master's degree students and recipients, including data on characteristics of master's degree students; financial support for master's students; growth in number of master's degrees awarded; number of master's degrees earned by gender and by race/ethnicity; the most popular fields, by gender, race/ethnicity, and citizenship; and economic value of a master's degree. The data indicate that, in 1989-90, more than half of master's degree students were women, most were white, more than half were age 30 or older, more than two-thirds were enrolled part time, and the majority was enrolled at public institutions. Only two-fifths of master's level students received some type of financial aid. In 1990, the number of master's degrees awarded surpassed the 1960 number by more than four times. A substantial portion of the tremendous growth is traced to increases in practice-oriented or career-oriented fields. Recent gains are primarily due to increases in the number of foreign students earning master's degrees. Earning a master's degree has a definite economic payoff. The paper concludes with 8 end notes, descriptions of several data resources, and a bibliography of 16 items. (JDD)

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ED 381 107

RESEARCH BRIEFS Volume 3, Number 1 • 1992

Division of Policy Analysis and Research
American Council on Education, Washington, D.C.

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Master's Degree Students and Recipients: A Profile

Eileen M. O'Brien

Over the past three decades, the master's level of postsecondary education has become increasingly important. No longer considered only "a waystation on the road to the doctorate," the master's degree is recognized as a significant credential for professional development and career advancement.[1] Master's degree students now represent four-fifths of the graduate student population, and the number of master's degrees conferred annually quadrupled between 1960 and 1990.

Yet, little is known about master's degree students and recipients. Most national data sources on graduate students do not distinguish between master's and doctoral students, making it difficult to draw a comprehensive profile of these students. Although the National Research Council publishes its annual *Survey of Earned Doctorates*, which provides a wealth of information on Ph.D. recipients, no comparable survey exists for those completing a master's program.

This brief summarizes the limited data available on master's students, detailing in particular the growth in career-oriented fields. It addresses the questions: Who earns a master's degree? What fields are most popular? Who receives financial aid? How many students attend part-time? What is the economic payoff for a master's education? Finally, recommendations for further research and a discussion of the policy implications of recent trends are included.

HIGHLIGHTS AND IMPLICATIONS

- An estimated 1.3 million students—at least 80 percent of all graduate students—are enrolled in master's programs.

A recent study from the National Center for Education Statistics (NCES) provides this profile of master's degree students in 1989-90:

- — More than half (59 percent) were women.
- — Most master's degree students (82 percent) were white; 18 percent were minority students.
- — More than half (52 percent) were 30 or older.
- — More than two-thirds (68 percent) were enrolled part time.
- — The majority (65 percent) was enrolled at public institutions.

- In 1989-90, only two out of every five master's-level students received some type of aid. Most relied on several different sources: 12 percent took out loans; 28 percent received grants; 9 percent were awarded teaching or research assistantships; and 12 percent received aid from their employers.
- In 1960, fewer than 75,000 master's degrees were awarded. In 1990, the number of master's degrees awarded surpassed 320,000, more than four times the number in 1960. A substantial portion of the tremendous growth at the master's level can be traced to increases in practice-oriented or career-oriented fields such as education, business, engineering, public affairs and the health professions.
- Recent gains are primarily due to the increase in the number of foreign students earning master's degrees. From 1979 to 1989, the number of master's degrees increased slightly (3 percent), but this was largely due to the (75 percent) rise in the number of non-U.S. citizens earning master's degrees. During this period the number of master's awarded to U.S. citizens actually declined by 2 percent.
- Women now earn a slight majority of master's degrees. In 1991, women are expected to earn 180,000 (53 percent of the total) master's degrees, compared with 1960, when women earned 23,500 master's degrees (32 percent of the total).

Eileen M. O'Brien is a Research Analyst in the Division of Policy Analysis and Research at the American Council on Education.

- Minority representation among master's recipients changed little from 1976 to 1989: their proportion of master's degrees inched up from 10 percent to 11 percent.
- Earning a master's degree has a definite economic payoff, Census data indicates. For adults (age 18 and above) in 1987, the average monthly income for an individual with a master's degree was $2,776, compared with $2,109 for those with a bachelor's degree and $1,135 for high school graduates.
- The master's degree will continue to be a much sought-after credential, especially for those students seeking career enhancement. In addition, as fields consider requiring the master's degree for entry-level qualification, the number of master's degrees in these fields will increase, and the overall specialization and professionalization of master's programs is likely to continue.
- National data on master's degree students is scarce. Although statistics on degree recipients are readily available, these figures tell us little more than the recipient's gender, race/ethnicity, citizenship and field of concentration. More information on characteristics such as attendance status, socioeconomic status, time to degree, post-degree employment, or study plans might help institutions better tailor their programs to meet students' needs.

Introduction: The Evolution of Today's Master's Degree

The master's degree has sometimes been viewed by the higher education community as either a stepping stone or a consolation prize for those enrolled in doctorate programs. Yet since 1945 it has been redefined in response to the needs of the American workforce and an entire generation of students (Spencer, 1986). This transformation occurred on an institution-by-institution and largely *ad hoc* basis, with the degree being adapted to offer an educational program focusing on specialization, professionalization, and career enhancement and development.

While the master's degree continues to offer scholarly training for those who are interested in academic careers, a major portion of its growth can be traced to older students preparing for mid-career changes or for reentry into the work force after an extended absence (Spencer, 1986). In the most recent and comprehensive study of the master's degree, Clifton Conrad and his colleagues found that these degrees are highly valued by recipients and their employers, and that the degree has attracted a substantial population of students who consider the master's degree a terminal degree (Conrad et al. 1991).

In addition, master's-level programs have been especially effective in encouraging working individuals, through evening and external programs, to undertake graduate study. And as projections from NCES indicate, the number of master's students will continue to grow well into the next century.

A Profile of Master's Degree Students

Enrollment statistics on master's degrees are not easily accessible, since most national data sources combine master's and doctoral students in graduate enrollment counts. The National Postsecondary Student Aid Study (NPSAS), conducted by the National Center for Education Statistics (NCES), provides the most recent enrollment characteristics specifically for master's degree students.[2]

- The NPSAS sample showed that 84 percent of graduate students were seeking a master's degree in 1989-90, indicating that about 1.3 million students are enrolled in master's programs.

In addition, NPSAS identified the following characteristics of master's degree students in 1990 (figure 1):

- Women outnumbered men: 59 percent vs. 41 percent.
- The majority (65 percent) of master's candidates were enrolled at public institutions. Two-thirds of master's degree students attended doctoral institutions.
- Minority students accounted for less than 20 percent of all master's degree students:
  - — 82 percent of all students were white;
  - — 6 percent were African American;
  - — 8 percent were Asian American;
  - — 4 percent were Hispanic; and
  - — less than one percent were American Indian.
- Nonresident aliens accounted for 9 percent of all master's students, but this proportion was slightly higher at public doctoral institutions and slightly lower at institutions that did not grant doctorates.
- More than two-thirds (68 percent) of master's degree students attended on a part-time basis.

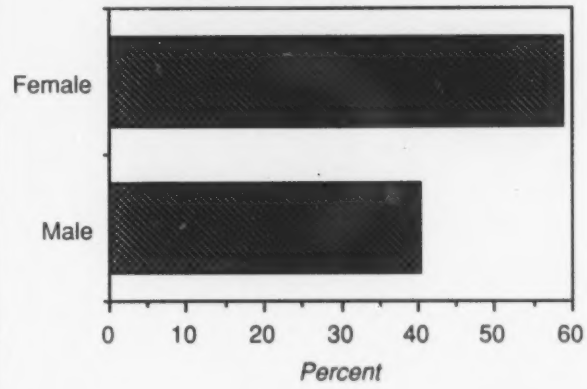
Master's students' attendance status may depend on their discipline. In fields like business and education, the master's degree predominates and most students attend part time; yet in fields where the doctoral degree is the focal terminal degree (humanities, life sciences, and physical sciences) full-time study is the norm (Syverson and Welch, 1991).

- For example, in 1989, 63 percent of business students and 74 percent of education students were enrolled part time, compared with 38 percent of humanities students.
- Business and education programs enrolled one-half of all master's degree students: 23 percent were in business programs and 28 percent were in education programs.
- Less than 20 percent of master's degree students were younger than 25; 28 percent were between the ages of 25 and 29; and 52 percent were 30 or older.

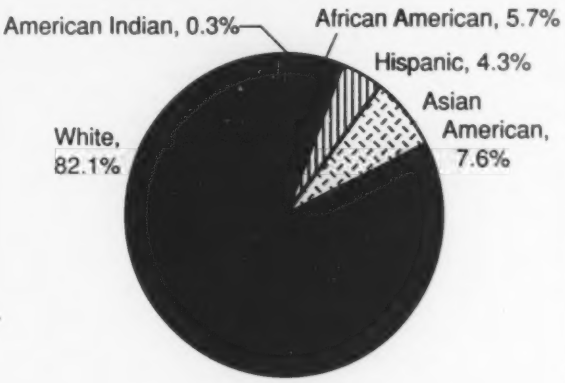
Figure 1

Who are Master's Degree Students?

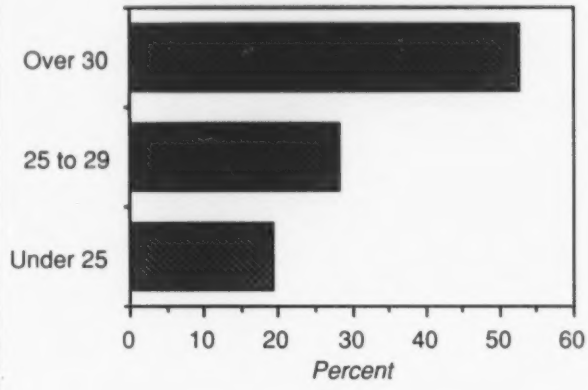
The majority of master's degree students are women . . .



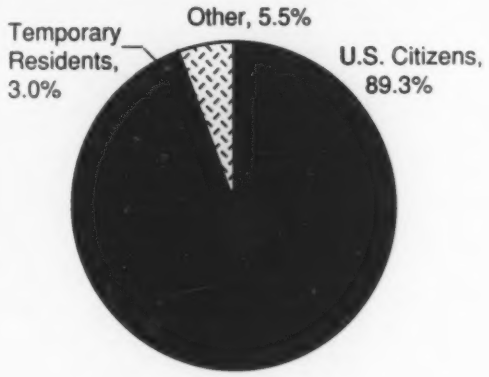
and despite some gains in minority enrollment, most are white.



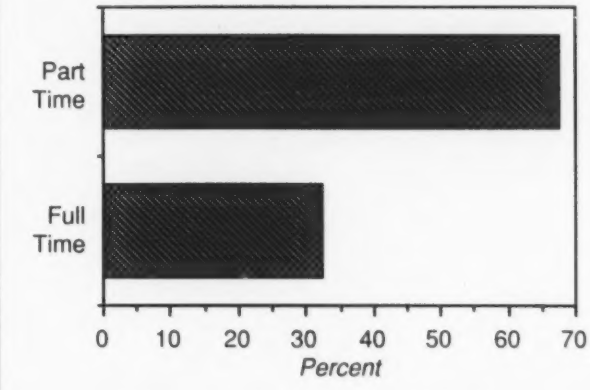
Most are over 30 . . .



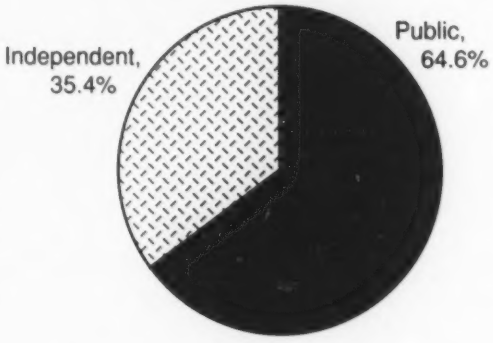
and are U.S. citizens.



Most attend part time . . .



at public institutions.



Source: National Center for Education Statistics, 1989-90 National Postsecondary Student Aid Study, unpublished tabulations.

- Additional research indicates that master's degree students are typically older than doctoral students. One national study of graduate students found that on average, master's degree students were almost two years older than doctoral students (25 vs. 23) (Wilder, 1991).

Financial Support for Master's Students

- According to NPSAS, in 1990, only two out of every five master's-level students received some type of financial support. Most students relied on several different sources. Of those surveyed:
  - — 12 percent took out loans;
  - — 28 percent received grants, including fellowships and tuition waivers;
  - — 9 percent were awarded assistantships; and
  - — 12 percent received aid from their employers.
- Institutional aid appears to be a more significant source than support from federal or state governments, with 20 percent of master's students reporting aid from their institution, while only 12 percent received federal support and only 2 percent received state aid (NCES, 1991d). Although the NPSAS tabulations used for this brief do not identify whether aid is in the form of loans or grants, it is estimated that almost 80 percent of master's degree students on federal aid actually receive loans.[4]

NPSAS data indicate that students at doctoral institutions were more likely to receive aid (including loans) than those at comprehensive institutions.

- More than half of master's degree students (52 percent) at independent doctoral institutions were aided, compared with 41 percent of students at independent comprehensive institutions.
- Forty percent of master's degree students at public doctoral universities received some type of aid, while only 27 percent of their counterparts at public comprehensive institutions did.

Part-time master's degree students are less likely than full-time students to receive aid from traditional sources, NPSAS found.

- More than two-thirds (67 percent) of part-time students said they received no aid at all, and only 13 percent reported aid from the institution.
- In addition, only 6 percent of part-time students were granted federal aid and 1 percent were awarded state aid.
- In comparison, almost three out of five (58 percent) full-time students reported receiving some type of aid, and 37 percent were granted institutional aid.
- More than one-quarter (26 percent) of full-time students received federal aid and 5 percent were provided state aid.
- However, 15 percent of part-time master's degree students received financial support from their employers, compared with 6 percent of full-time students.
- Male master's students were more likely than female master's students to receive aid: 45 percent of men were awarded aid, while 37 percent of women received some type of aid.

Minority master's degree students were somewhat more likely to receive aid than white master's students, especially from institutional sources:[5]

- Thirty-nine percent of white students were aided, with 19 percent receiving institutional aid;
- Forty-four percent of African Americans were awarded some type of aid, and 23 percent were granted institutional aid;
- Forty-two percent of Hispanic students reported receiving aid, and 22 percent found financial help from their institutions; and
- Forty-five percent of Asian American students said they were awarded some type of aid, and 33 percent received some institutional support.
- Non-U.S. citizens enrolled in master's degree programs were more likely to receive financial support than U.S. citizens. Half of foreign students received aid of some type, and 39 percent said they received institutional support; comparable figures for U.S. citizens were 39 percent and 18 percent, respectively.
- Institutions supported a higher proportion of master's students in the arts and humanities (37 percent), engineering (30 percent), and biology (36 percent) than master's candidates in business (14 percent) or education (13 percent).

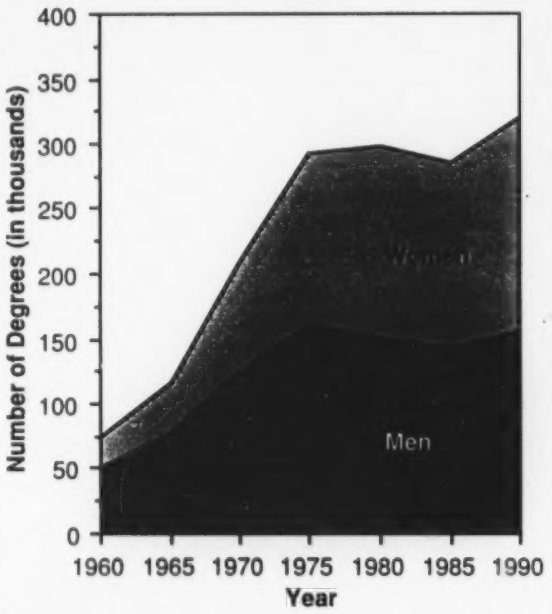
Tremendous Growth in Number of Master's Degrees Awarded

The master's level of postsecondary education has experienced phenomenal growth over the past three decades—master's degrees now account for almost one-fourth of all academic degrees awarded.[6]

- In 1960, fewer than 75,000 master's degrees were awarded. In 1991, the number of master's degrees awarded reached 337,000, more than quadruple the number in 1960 (NCES, 1991b).
- Previously, the highest number of master's degrees awarded was 317,000 (in 1977). During the early 1980s, the total dropped below the 300,000-level, reaching a low-point of 280,000 in 1985. Yet annual award levels have rebounded dramatically since then, and are now at their highest level ever.

Figure 2

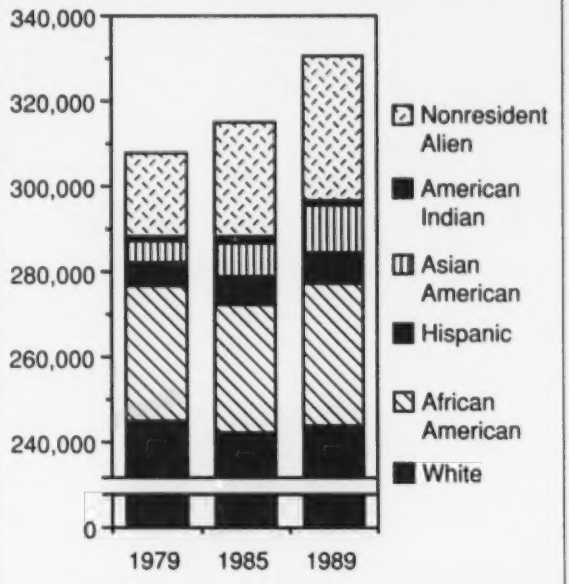
Master's Degrees Conferred, 1960 to 1990



Source: National Center for Education Statistics, *Digest of Education Statistics, 1991*, Washington, D.C.: Government Printing Office, 1991.

Figure 3

Master's Degrees by Race/Ethnicity and Citizenship, 1979, 1985, and 1989



Source: Carter, Deborah J. and Reginald Wilson, *Tenth Annual Status Report: Minorities in Higher Education*, Washington, D.C., American Council on Education, 1992.

- Increases from 1979 to 1989 were primarily due to a 75 percent rise in the number of non-U.S. citizens earning master's degrees. During this period, the number of master's awarded to U.S. citizens actually declined by 2 percent.
- However, in recent years, the number of U.S. citizens earning master's degrees has increased from the 1985 low level. In 1989, U.S. citizens earned 8 percent more master's degrees than they did in 1985.
- Most master's degrees (82 percent) were awarded by doctorate-granting institutions in 1989 (Syverson and Welch, 1991).

DIFFERENCES BY GENDER

Throughout the 1960s and 1970s, men earned more master's degrees than women. Not until 1986 did women reach parity, and they have earned slightly more master's degrees each year since then (figure 2).

- Among the U.S. adult population (age 18 and older), 3.4 million men and 2.8 million women had earned master's degrees by 1986. Men are slightly more likely than women (4 percent vs. 3 percent) to have completed this level of education (Census, 1987).
- Women now earn a majority of master's degrees. In 1991, women are expected to earn 180,000 master's, or 53 percent of the total master's degrees awarded, compared with 1960, when women earned 23,500 or 32 percent of all master's degrees (NCES, 1991b).

DIFFERENCES BY RACE/ETHNICITY

- Interestingly, between 1979 to 1989, the number of master's degrees granted to whites declined 3 percent, largely due to a 12 percent drop in the number of white males earning master's degrees (table 1). White males earned 109,000 master's degrees in 1989, compared with 124,000 in 1979.
- Minority representation among master's recipients has not increased as sharply as women's (figure 3). From 1976 to 1989, the number of master's degrees awarded to members of minority groups rose only 9 percent (from 30,000 to 33,000), and the proportion of master's degrees they earned inched up from 10 percent to 11 percent (Carter, 1992).[7]

African Americans experienced large decreases in the number of master's degrees awarded to them during this decade.

- From 1979 to 1989, the number of African American women earning master's degrees dropped from 12,000 to 8,800—a 28 percent decline.

- During the same period, the number of master's degrees received by African American men fell from 7,000 to 5,000, a 26 percent decrease.
- The number of Hispanic recipients of master's degrees increased 31 percent from 1979 to 1989, largely due to Hispanic women's impressive gain from 2,800 to 3,900 degrees.
- Asian Americans almost doubled the number of master's degrees they received during this decade. Master's degrees awarded to Asian American women jumped from 2,100 in 1979 to 4,400 in 1989.
- Although American Indians experienced some gains in the number of master's degrees they earned between 1979 and 1989—including a 26 percent increase for American Indian women—they continue to represent less than 1 percent of all master's degree recipients (table 1).
- Nonresident aliens (foreign students with temporary visas) have accounted for an increasingly larger proportion of master's recipients. In 1979, 19,000 master's degrees were awarded to nonresident aliens; in 1989, 34,000 master's recipients were nonresident aliens.
- Nonresident aliens now receive 11 percent of the master's degrees awarded in the United States—the same proportion as all minority groups combined.

The Most Popular Fields

A major portion of the tremendous growth in the number of master's degrees awarded can be traced to the need for continued professional development. This is evidenced by the fact that the majority of master's degrees are awarded in practice-oriented or career-oriented fields, such as education, business, engineering, public affairs and the health professions.

Although the largest number of master's degrees continues to be conferred in the field of education, its popularity is waning (table 2 and figure 4).

- From 1965 to 1975, the number of master's degrees in education surged from 43,700 to 120,000, accounting for about 40 percent of all master's degrees throughout the decade (Hauptman, 1986). But they declined steadily in the late 1970s, reaching a low of 75,000 in 1987. Education degrees increased again by 1989, accounting for 82,000 (27 percent) of all degrees awarded.
- The number and proportion of master's degrees in business and management has dramatically increased since 1965. Almost 8,000 master's degrees in business were awarded in 1965, while 73,000 were granted in 1989. Their proportion of all master's degrees conferred increased from 7 percent in 1965 to 24 percent in 1989.
- Between 1965 and 1989, the number of engineering master's degrees also increased substantially (from 12,000 to 23,700). However, their share as a percentage of all master's degrees declined from 11 percent to 8 percent.
- The proportion of master's degrees in health professions fields rose from 2 percent (2,500) in 1965 to 6 percent (19,300) in 1989.
- During the same period, master's degrees awarded in public affairs and social sciences remained consistent, comprising about 10 percent of all degrees granted at the master's level.

DIFFERENCES BY GENDER

Important differences exist between men and women in terms of the fields in which they earn master's degrees. Although women made considerable gains in male-dominated fields during the 1980s, they continued to earn the greater proportion of their degrees in education.

- In 1989, the three top fields for men earning master's degrees were: business (this field accounted for 33 percent of degrees awarded to men), engineering (14 percent), and education (14 percent).
- In 1979, these same fields were most popular among men, but with different proportions: business (27 percent), education (23 percent), and engineering (10 percent).
- For women, the top three fields in 1989 were: education (38 percent), business (15 percent) and health professions (9 percent).
- Yet, women master's degree candidates have diversified over the past decade: in 1979, more than half (52 percent) of the master's degrees earned by women were in education, and the second and third most popular fields—health professions and public affairs—accounted for much smaller proportions (7 percent).
- The number of M.B.A.'s earned by women more than doubled during this time, from 9,700 in 1979 to 24,600 in 1989.
- From 1979 to 1989, the number of engineering master's degrees awarded to men increased by 42 percent. This rise was largely due to gains made by nonresident alien men and Asian American men.

Table 1

Master's Degrees Conferred by Race/Ethnicity, 1979 and 1989

	1979		1989		Percent Change
	Total	Percent	Total	Percent	1979-89
Total	**300,255**	**100.0%**	**308,872**	**100.0%**	**2.9%**
Men	124,058	50.8%	148,486	48.1%	-2.7%
Women	147,618	49.2%	160,386	51.9%	8.6%
White	**249,360**	**83.0%**	**241,607**	**78.2%**	**-3.1%**
Men	124,058	81.3%	109,184	73.5%	-12.0%
Women	125,302	84.9%	132,423	82.6%	5.7%
Minority	**31,468**	**10.5%**	**33,193**	**10.7%**	**5.5%**
Men	13,676	9.0%	15,307	10.3%	11.9%
Women	17,792	12.1%	17,886	11.2%	0.5%
African American	**19,418**	**6.5%**	**14,076**	**4.6%**	**-27.5%**
Men	7,070	4.6%	5,200	3.5%	-26.4%
Women	12,348	8.4%	8,876	5.5%	-28.1%
Hispanic	**5,555**	**1.9%**	**7,270**	**2.4%**	**30.9%**
Men	2,786	1.8%	3,360	2.3%	20.6%
Women	2,769	1.9%	3,910	2.4%	41.2%
Asian American	**5,496**	**1.8%**	**10,714**	**3.5%**	**94.9%**
Men	3,325	2.2%	6,247	4.2%	87.9%
Women	2,171	1.5%	4,467	2.8%	105.8%
American Indian	**999**	**0.3%**	**1,133**	**0.4%**	**13.4%**
Men	495	0.3%	500	0.3%	1.0%
Women	504	0.3%	633	0.4%	25.6%
Nonresident Alien	**19,427**	**6.5%**	**34,072**	**11.0%**	**75.4%**
Men	14,903	9.8%	23,995	16.2%	61.0%
Women	4,524	3.1%	10,077	6.3%	122.7%

Sources: National Center for Education Statistics, *Digest of Education Statistics, 1990*, Washington, D.C.: Government Printing Office, 1991, and Carter, Deborah and Reginald Wilson, *Tenth Annual Status Report: Minorities in Higher Education*, Washington, D.C.: American Council on Education, 1992.

Table 2

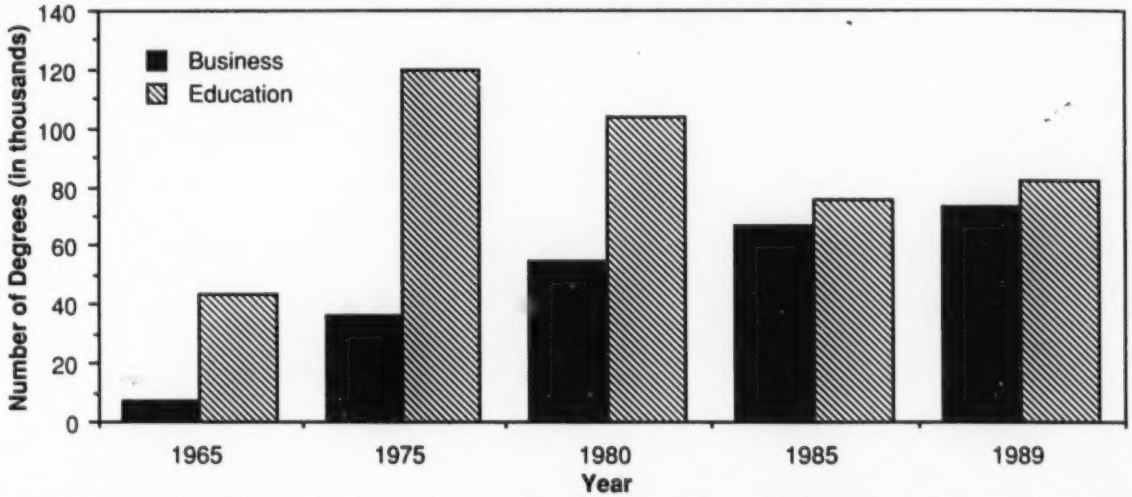
Master's Degrees for Selected Fields, 1965 to 1989
(in thousands)

Field	1965	Percent	1975	Percent	1980	Percent	1985	Percent	1989	Percent
Business/ Management	7.6	7.0%	36.5	12.0%	55.1	19.0%	66.5	23.7%	73.1	23.7%
Education	43.7	39.0%	120.2	41.0%	103.5	35.0%	75.8	27.0%	82.2	26.6%
Engineering	12.1	11.0%	15.4	5.0%	16.2	5.0%	20.1	7.2%	23.7	7.7%
Health Professions	2.5	2.0%	10.8	4.0%	15.7	5.0%	17.0	6.1%	19.3	6.2%
Public Affairs/ Social Sciences	10.7	10.0%	32.4	11.0%	32.3	11.0%	27.3	9.7%	28.7	9.3%
Other Fields	35.6	31.0%	78.3	27.0%	75.3	25.0%	73.7	26.3%	81.9	26.5%
Totals	112.2		294.0		298.1		280.4		308.9	

Sources: Hauptman, Arthur M., *Students in Graduate and Professional Education: What We Know and Need to Know*, Washington, D.C.: Association of American Universities, 1986, and National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" surveys, unpublished tabulations, 1990.

Figure 4

Education and Business Master's Degrees, Selected Years



Source: Carter, Deborah J. and Reginald Wilson, *Tenth Annual Status Report: Minorities in Higher Education*, Washington, D.C., American Council on Education, 1992.

- The number of engineering master's degrees earned by women also rose significantly—the number more than tripled from 951 to 3,080. However, women still represent only 13 percent of all engineering master's degree recipients.
- Health professions was another field where women made impressive gains, with a 37 percent increase from 1979 to 1989.

DIFFERENCES BY RACE/ETHNICITY

Similar to trends for all master's degree recipients, minority students now earn fewer master's degrees in education and social science and more master's degrees in business, engineering, and the health professions.

- From 1979 to 1989, minorities earned almost 6,000 fewer master's degrees in education. In 1979, education degrees accounted for almost half (47 percent) of all master's degrees awarded to minorities; by 1989, minorities earned only slightly more than one-quarter (27 percent) of their master's degrees in education.
- Asian Americans were the only minority group to experience a gain in the number of education master's degrees from 1979 to 1989. This was mainly due to a 47-percent surge between the years 1987 and 1989. From 1979 to 1987, the number of education master's degrees awarded to Asian Americans had dropped by 23 percent.
- For other minority groups, particularly for African Americans, the decline in education degrees at the master's level was sizable: 51 percent for African Americans, 16 percent for Hispanics, and 14 percent for American Indians.
- By the end of the 1980s, African Americans earned 47 percent fewer master's degrees in social science than in 1979. The increases in degrees in this field for American Indians (18 percent), and Asian Americans (41 percent) were not enough to make up for the losses experienced by African Americans and Hispanics (2 percent).
- From 1979 to 1989, all minority groups earned more master's degrees in business. Twice the number of Asian Americans and Hispanics received business master's degrees; and American Indians and African Americans each earned 45 percent more master's degrees in business in 1989.

DIFFERENCES BY CITIZENSHIP

During the 1980s, nonresident aliens experienced large gains in almost all fields, with the exception of education.

- Almost six times as many master's degrees in computer science were awarded to foreign students in 1989 (2702) as in 1979 (465).
- The number of foreign students earning master's degrees in engineering, business and health professions also expanded dramatically—close to or at 80 percent for all three fields.
- In education, a drop of 10 percent occurred in the number of master's degrees awarded to nonresident aliens during the decade.

The Economic Value Of a Master's Degree

- According to Census Bureau data, 6.2 million adults (age 18 and older) had acquired master's degrees by the spring of 1987 (Kominski, 1990). This represents 3.5 percent of the adult population. Census data show that in 1987, 2 percent (440,000) of African American adults held a master's degree.[8]

Earning a master's degree has a definite payoff in terms of income, according to Census Bureau data. Substantive differences exist for gender, racial and ethnic groups, and by field of the degree.

- For adults (age 18 and above) in 1987, the average monthly income for an individual with a master's degree was $2,776, compared with $2,109 for those with a bachelor's degree and $1,135 for high school graduates.
- In 1987, men with master's degrees earned a monthly average of $3,327, while women with master's degrees earned $2,098.
- The difference between the earnings of African-American and white adults with a master's education was also significant: whites earned an average of $2,825 per month, while African Americans earned $2,181.
- Surveys indicate that average monthly salaries for master's degree recipients in highly-sought-after fields may be even higher. Students who graduated in 1991 with a master's in engineering reported earning $3,288 a month (Lindquist, 1991). And 1991 recipients of a master's in business administration earned $3,508 each month.
- In 1985, the Recent College Graduates (RCG) Survey conducted by NCES found that individuals who were employed full time one year after earning their master's degree had increased their expected average monthly salary by $492 (NCES, 1988).
- However, after controlling for level of degree, field of study, and prior work experience, male graduates of master's programs earned about $375 more per month than their female counterparts one year after degree completion.
- RCG also found that most master's degree recipients were employed one year after degree completion, with a slight difference between men and women: less than 2 percent of both men and women were unemployed and 82 percent of men were employed full time, compared with 78 percent of women.
- Minority master's graduates were somewhat less likely to be employed than whites, with 3 percent of minority degree recipients unemployed and 75 percent employed full time, compared with 1 percent of white degree recipients unemployed and 81 percent employed full time.
- Gender differences for minority master's recipients were even more pronounced, with 5 percent of men unemployed and 68 percent employed full time, compared with 1 percent of women unemployed and 84 percent employed full time.

A Look to the Future

Recently, interest increased in master's *and* doctoral programs, as evidenced by a 9-percent rise in applications for graduate school between 1989 and 1990, and a 13-percent jump from 1988 to 1990 (Syverson, 1991). (Again, data based solely on master's programs are not available.) The current recession could be largely responsible for these gains, as recent college graduates with poor job prospects turn toward graduate education. Such increases in applications to graduate school may continue in the near future, but eventually are expected to level out.

As more fields consider requiring the master's degree as the entry-level credential, the number of master's degrees in these fields will increase. For example, the American Physical Therapy Association determined that beginning in 1990, the entry level degree for their profession should be the master's degree (Spencer, 1986). In addition, the Carnegie Forum on Education and the Economy recommended in its report on teacher education reform that the master's degree be required for all beginning teachers (Carnegie, 1986).

- Another indication that the number of master's degrees conferred will continue to increase is students' predictions about the highest degree they will earn. The proportion of freshman students who plan to earn a master's as their highest academic degree has increased from 31 percent in 1980 to 36 percent in 1991 (HERI, 1991).

NCES, in *Projections of Education Statistics to 2002*, projects that the number of master's degree recipients will continue to rise each year until 2002, largely due to continued increases in the number of women earning master's degrees.

- By 1995, the number of master's degrees is projected to be 354,000, with men expected to earn 165,000 (47 percent). In contrast, women are projected to earn 189,000 degrees, an 11-percent increase from the 1990 level.
- The number of master's degrees is projected to reach 383,000 by 2002, with men earning 184,000 master's degrees and women receiving 199,000.

IMPLICATIONS

National data on master's degree students is scarce. While NCES and the Council of Graduate Schools/Graduate Record Examinations enrollment surveys provide some information, the data is not provided for master's vs. doctoral level students. Previous research indicates that master's and doctoral students differ on many characteristics, such as age, attendance status, discipline, etc. Although statistics on degree recipients are readily available, these figures tell us little more than recipients' gender, race/ethnicity, citizenship and field of concentration. More information on characteristics such as attendance status, socioeconomic status, time to degree, post-degree employment or study plans is needed in order to help institutions better tailor their programs to meet students' needs.

Recognizing the difficulties for some institutions of rigorously defining who is a master's degree student, one recommendation would be to have annual enrollment surveys provide information on master's students so that more data would be available about this important segment of graduate students on an annual or semiannual basis.

In order to understand more about master's degree students—their motivation, their aspirations about eventually obtaining a Ph.D., the barriers they face, etc.—a thorough, perhaps annual, investigation of master's degree recipients similar to the National Research Council's *Survey of Earned Doctorates*, is needed. Data on degree completion rates, time to degree, loan indebtedness, institution of undergraduate degree, etc. could indicate what barriers master's degree students are facing and what institutions are successful in encouraging students to seek advanced degrees.

The higher proportion of master's degree students at doctoral institutions who receive aid may indicate that these students are receiving master's degree as an intermediary step to a doctorate. Institutional aid appears to be an important factor in these students' degree attainment. One might argue that if more students were aided by institutions, a larger number might consider going on to the doctorate.

Since such large proportions of master's students are earning degrees in business and education—two disciplines in which students tend to enroll part time—colleges and universities should learn how business and education schools assist these students' efforts to combine work with the attainment of an advanced degree.

Examining master's programs might also help to explain certain gender differences in participation rates. Specifically, why have women reached parity with men in terms of the number of master's degrees earned, yet still lag behind in the number of Ph.D.s earned? Why has the number of men—especially African-American and white men—earning master's degrees decreased? Are there specific aspects in master's programs that make them more accessible to women and less accessible to men? Many of the same questions apply to minority students' experience in master's programs.

Increased interest in graduate school, as evidenced by the 13 percent rise in applications over the past two years, may be a double-edged sword for graduate school administrators. While increased interest may allow programs to grow and enable schools to become more selective, it may also place an added burden on institutions dealing with budget and staffing cuts imposed by the recession.

The master's degree is likely to continue to be a much sought-after credential, especially for older students preparing for mid-career changes or reentry into the work force or for those seeking career enhancement. As master's level programs grow, they will draw on their expertise in offering working individuals, through evening and external programs, the opportunity for graduate study. In addition, as more and more individuals view the master's degree as a tool for career enhancement and for career transition, the number of master's degrees will increase and the overall specialization and professionalization of master's programs will continue.

ENDNOTES

1 Spencer, Donald S. "The Master's Degree in Transition," *CGS Communicator*, January 1986. Washington, D.C.: Council of Graduate Schools, pg. 2.

2 The NPSAS study surveyed students who received aid, as well as those who did not.

3 Students' responses to these categories were not mutually exclusive; that is, some students responded that they took out loans *and* received fellowships or grants, or they received a tuition reimbursement from their employer *and* took out a loan, etc.

4 Based on calculations from the 1987 NPSAS.

5 Data on American Indian master's students was not included, due to their small representation in the sample.

6 In 1990, almost 320,000 master's degrees were awarded, accounting for 22 percent of all bachelor's, master's, doctorate and first professional degrees conferred.

7 Degrees conferred information presented by race/ethnicity was first available in 1975-76; therefore, comparisons based on earlier years cannot be made.

8 Unfortunately, the Census Bureau did not provide data on other racial/ethnic groups.

RESOURCES

1) The Council of Graduate Schools (CGS) recently sponsored a three-year national study of master's programs, which will be published under the title *A Silent Success: Master's Education in the United States*, in early 1993 by The Johns Hopkins University Press. Conducted by University of Wisconsin-Madison professor Clifton Conrad, along with Jennifer Grant Haworth and Susan B. Millar, this important study evaluates the character and quality of master's programs and examines their value to students, degree recipients, faculty, administrators and employers. For more information, contact the Council of Graduate Schools, Suite 430, One Dupont Circle NW, Washington, D.C. 20036. (202) 223-3791.

2) There are two major sources for enrollment data on graduate students. However, as mentioned earlier, neither presents these figures for master's and doctoral levels.

   - The National Center for Education Statistics' *Digest of Education Statistics* provides information on overall graduate enrollment, with breakdowns by gender, race/ethnicity, field of degree, etc. The *Digest* also offers data on conferred master's degrees with the same categories. For more information, contact the National Center for Education Statistics, Education Information Branch, (800) 424-1616. To order the *Digest*, contact the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, (202) 275-3054.

   - CGS, along with the Graduate Record Examinations (GRE) Board, conducts the annual CGS/GRE Survey of Graduate Enrollment, which provides information on graduate applications, enrollment, and degrees. The survey combines data on master's and doctorate students, and focuses on enrollment by discipline, attendance status, race/ethnicity, institution type, etc. Contact CGS (see above) for more information.

3) The Graduate Record Examinations (GRE) Board studies many aspects of graduate education, including minority participation, overall trends for GRE test-takers, and degree attainment patterns of doctoral students. For more information on GRE studies, contact the Office of GRE Program Director for Data Summaries, Educational Testing Service, Princeton, N.J. 08541.

   In addition, researchers at GRE are currently completing a significant study of graduate education, which will provide data on master's and doctoral levels. Titled *Decisions About Graduate Education: Results from a Four-Year Longitudinal Study of GRE-Takers*, the project is directed by Gita Wilder, a research scientist at the Educational Testing Service and will be available in mid-1992. Based on four consecutive surveys of a sample of GRE-takers, the study examines the role of financial aid and a variety of other variables in the decisions of these test-takers to apply to, attend, enroll, and persist in graduate school. For more information, contact Gita Z. Wilder, Division of Education Policy Research, Educational Testing Service, Princeton, N.J. 08541.

4) In addition to enrollment data, NCES collects a wealth of information on graduate students and master's degree recipients. The areas covered include:

   Financial Aid—NCES has twice surveyed graduate students as part of its National Postsecondary Student Aid Study (NPSAS). Results of the most recent (1989-90) study are currently available in disk or tape format and will be published in a report next year.

   Employment and Salary Data—NCES's Recent College Graduates Survey periodically gathers data on a nationally representative sample of 16,000 bachelor's and 2,000 master's degree recipients one year after degree completion. The survey compiles information on employment status, occupation, income and continued school enrollment. Data in this brief are taken from the 1985 survey, *Employment Outcomes of Recent Master's and Bachelor's Degree Recipients*; results from the most recent survey (1989) are not yet available in a comparable format.

5) Other sources of employment and salary data on master's degree recipients include:

   The Census Bureau. The report, *What's it Worth? Educational Background and Economic Status: Spring 1987*, will be updated in 1992, offering more data on the average annual income of master's degree recipients, as well as the actual number of American adults holding master's degrees. This is part of the Current Population Reports, Series P-70. To order Census publications, contact (301) 763-4100.

   The Northwestern Lindquist/Endicott Report surveys employers to determine entering incomes for bachelor's and master's degree recipients in business administration, engineering and other technical fields. The annual report is available for $7 (for non-profit organizations) from Dean Victor Lindquist, Director of Placement, Scott Hall, Northwestern University, Evanston, IL 60208, (708) 491-3705.

   The College Placement Council's *Annual Survey* also provides salary information for bachelor's and master's degree recipients in a variety of fields. For more information, contact the College Placement Council, 62 Highland Ave., Bethlehem, PA 10817, (215) 868-1421.

BIBLIOGRAPHY

Carnegie Forum on Education and the Economy. *A Nation Prepared: Teachers for the 21st Century*. Washington, D.C.: Carnegie Forum, 1986.

Carter, Deborah and Reginald Wilson. *Tenth Annual Status Report: Minorities in Higher Education*. Washington, D.C.: American Council on Education, 1992.

Conrad, Clifton F., Jennifer Grant Haworth and Susan B. Millar. "Overview of the National Study of Master's Education." Paper presented at the Annual Meeting of the Council of Graduate Schools, 4 December, 1991, Washington, D.C.

Dey, Eric, Alexander Astin and William Korn. *The American Freshman: Twenty-five Year Trends*. Los Angeles: Cooperative Institutional Research Program, 1991.

Hauptman, Arthur M. *Students in Graduate and Professional Education: What We Know and Need to Know*. Washington, D.C.: Association of American Universities, 1986.

Kominski, Robert. *What's it Worth? Educational Background and Economic Status: Spring 1987*. Current Population Reports, Series P-70, No. 21, 1990. Washington, D.C.: U.S. Department of Commerce, Census Bureau.

Lindquist, Victor. *The Northwestern Lindquist-Endicott Report, 1991*. Evanston, IL: Northwestern University Placement Center, 1991.

Spencer, Donald S. "The Master's Degree in Transition," *CGS Communicator*, January 1986. Washington, D.C.: Council of Graduate Schools.

Syverson, Peter D., and Stephen R. Welch. *Graduate Enrollment and Degrees: 1986-1989*. Washington, D.C.: Council of Graduate Schools, 1991.

Syverson, Peter D. "Applications for Graduate Study Climb in the Second Half of the 1980s." *CGS Communicator*, September/October 1991. Washington, D.C.: Council of Graduate Schools.

U.S. Department of Education, National Center for Education Statistics. *Digest of Education Statistics 1991*. Washington, D.C.: U.S. Government Printing Office, 1991a.

U.S. Department of Education, National Center for Education Statistics. *Early Estimates: National Higher Education Statistics, Fall 1991*. Washington, D.C.: U.S. Government Printing Office, 1991b.

U.S. Department of Education, National Center for Education Statistics. *Employment Outcomes of Recent Master's and Bachelor's Degree Recipients*. Washington, D.C.: U.S. Government Printing Office, 1988.

U.S. Department of Education, National Center for Education Statistics. *Projections of Education Statistics to 2002*. Washington, D.C.: U.S. Government Printing Office, 1991c.

U.S. Department of Education, National Center for Education Statistics. The 1989-90 National Postsecondary Student Aid Study. Unpublished tabulations, 1991d.

Wilder, Gita Z. "Decisions About Doctoral Study: Results from a Two-Year Longitudinal Study of GRE-Takers." Paper presented at the Association for the Study of Higher Education Annual Meeting. Boston. November, 1991.

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